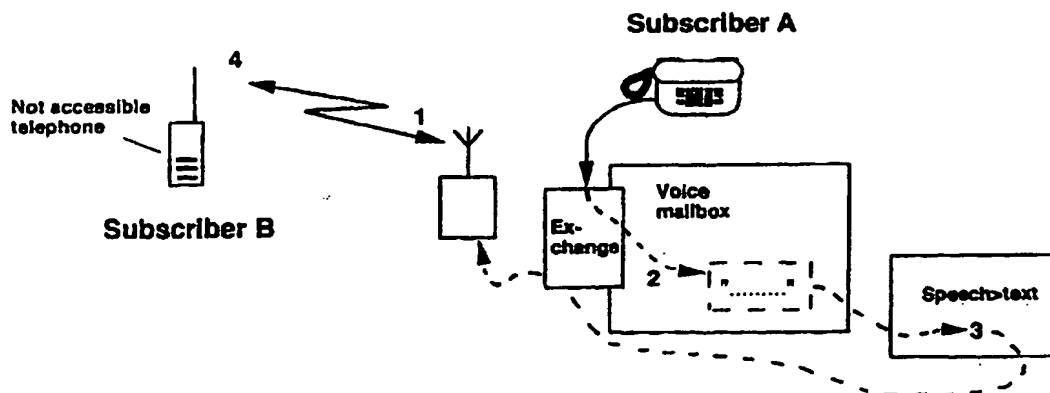




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>H04M 3/50, H04Q 7/22</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 98/05154</b> <b>(43) International Publication Date:</b> 5 February 1998 (05.02.98)
<b>(21) International Application Number:</b> PCT/SE97/01200 <b>(22) International Filing Date:</b> 2 July 1997 (02.07.97)  <b>(30) Priority Data:</b> 9602859-2      25 July 1996 (25.07.96)      SE  <b>(71) Applicant:</b> TELIA AB [SE/SE]; Mårbackagatan 11, S-123 86 Farsta (SE). <b>(72) Inventors:</b> MAGNUSSON, Peter; Blomstergatan 20, S-653 42 Karlstad (SE). URBY, Göran; S. Domarevägen 10, S-663 33 Skoghall (SE). <b>(74) Agent:</b> KARLSSON, Berne; Telia Research AB, Rudsjötterrassen 2, S-136 80 Haninge (SE).		<b>(81) Designated States:</b> NO, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report.          Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

**(54) Title:** VOICE MAILBOX FOR TEXT MESSAGES**(57) Abstract**

The invention relates to a device and a method at a telecommunication system which can convert one in the fixed network stored voice mailbox message to one in the mobile network transmissionable text message. The invention is characterized in that in the telecommunication system arranged voice mailbox a speech/text-conversion is made, and that the first number of characters in the message, for instance 160, are transmitted to the receiving telephone or the pager. The receiver then can read his/her message on the display unit of the receiving unit.

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

## TITLE OF THE INVENTION: VOICE MAILBOX FOR TEXT MESSAGES

## TECHNICAL FIELD

The present invention relates to a device and a  
5 method at a telecommunication system, which system includes  
at least one fixed network, one mobile network, and at  
least one voice mailbox.

## PRIOR ART

10 When a mobile telephone user is in a situation where  
he/she cannot talk on the telephone but yet has to receive  
a message, then the call can be connected to one in the  
telecommunication system arranged voice mailbox where a  
voice message can be delivered by the calling party. Said  
15 voice mailbox after that transmits a text message to the  
telecommunication terminal or the pager about that there is  
a message to be collected. This, however, will not help the  
person who due to his/her situation cannot call the voice  
mailbox and listen to the message. The aim with the present  
20 invention consequently is to solve this problem.

## SUMMARY OF THE INVENTION

The above said aim is achieved by means of a device  
and a method which attends to conversion of the in a voice  
25 mailbox stored speech message to a text message  
corresponding to said speech message, at which said device  
further attends to transmission of said text message to a  
portable terminal.

One advantage with this is of course that a user of a  
30 portable terminal immediately can read his/her message and  
form an opinion of the importance of this without needing  
to call his/her voice mailbox. The user consequently saves  
time.

Also when there is a telephone answering machine in  
35 the PSTN-network/exchange (for instance "Telesvar") and the  
user has no possibility to call and check his/her telephone

answering machine, this service can solve the problem by transmitting the message to either a pager, GSM telephone or the like.

More characteristics of the invention are given in the subclaims.

#### SHORT DESCRIPTION OF THE DRAWING

In the following a detailed description is given of an embodiment of the invention with reference to the only drawing.

Figure 1 shows schematically the telecommunication system according to the present invention.

1. The B-subscriber not accessible.
2. The A-subscriber speaks a voice message.
3. Voice-to-text conversion.
4. The X number of the first characters in the message are transmitted to the B-subscriber (160 characters in SMS GSM).

#### DETAILED DESCRIPTION OF AN EMBODIMENT OF THE INVENTION

A subscriber A tries to call a mobile subscriber B. The subscriber B, however, cannot be accessed, so the subscriber A will speak a message for subscriber B's voice mailbox 2. The speech message in the voice mailbox 2 is transmitted to a speech/text converter 3 which converts said speech message to a corresponding text message and transmits said text message to said mobile terminal via a mobile station 1. The speech/text-conversion is made according to technology applied for, for a patent by Telia, as will be seen in the Swedish patent applications SE-9401613-6 (US08/43062) and SE-9502202-6 (EP-96850108.0). The text message is shown on the display of the mobile terminal 4. The subscriber B consequently directly can read the message without the need to call his/her voice mailbox. The mobile terminal can consist of just any mobile telephone or pager.

In a special embodiment the first x number (amount) of the characters of the speech message (for instance the first 160 characters in the GSM/text-case) are transmitted to the mobile terminal.

5       The invention is intended to be used within all telephony, PSTN as well as cellular systems, where voice mailboxes are used. Within PSTN Telia's "Telesvar" (station-located personal telephone answering facility) can be connected to this service. Also Telia's "mobile  
10       answering service" for GSM/NMT can be connected to this service according to the present invention.

      What has been said above is only to be regarded as an advantageous embodiment of the invention, and the scope of protection of the invention is defined only in what is  
15       indicated in the following patent claims.

## PATENT CLAIMS

1. Device at a telecommunication system, which system includes at least one fixed network, preferably PSTN, at least one mobile network, and at least one voice mailbox (2), c h a r a c t e r i z e d in that it attends to conversion of one in a voice mailbox (2) stored speech message to a text message corresponding to said speech message, after which said device attends to transmission of said text message to a terminal (4).

2. Device according to patent claim 1, c h a r a c t e r i z e d in that said text message is shown on the screen of said terminal (4).

3. Device according to any of the patent claims 1 or 2, c h a r a c t e r i z e d in that said terminal (4) is just any mobile telephone, just any pager, or just any portable terminal.

4. Device according to any of the previous patent claims, c h a r a c t e r i z e d in that it attends to speech/text-conversion of a first in advance decided number of characters, for instance the first 160 characters, and transmits these characters to said terminal (4).

5. Method at a telecommunication system, which system includes at least one fixed network, preferably PSTN, at least one mobile network, and at least one voice mailbox (2), c h a r a c t e r i z e d in that it includes the steps that:

(a) just any one subscriber (A) tries to call just any one subscriber (B);

(b) subscriber (B) is not accessible, at which subscriber (A) speaks a message for subscriber (B)'s voice mailbox (2);

(c) the speech message in the voice mailbox (2) is transmittted to a speech/text-converter (3) which converts said speech message to a corresponding text message;

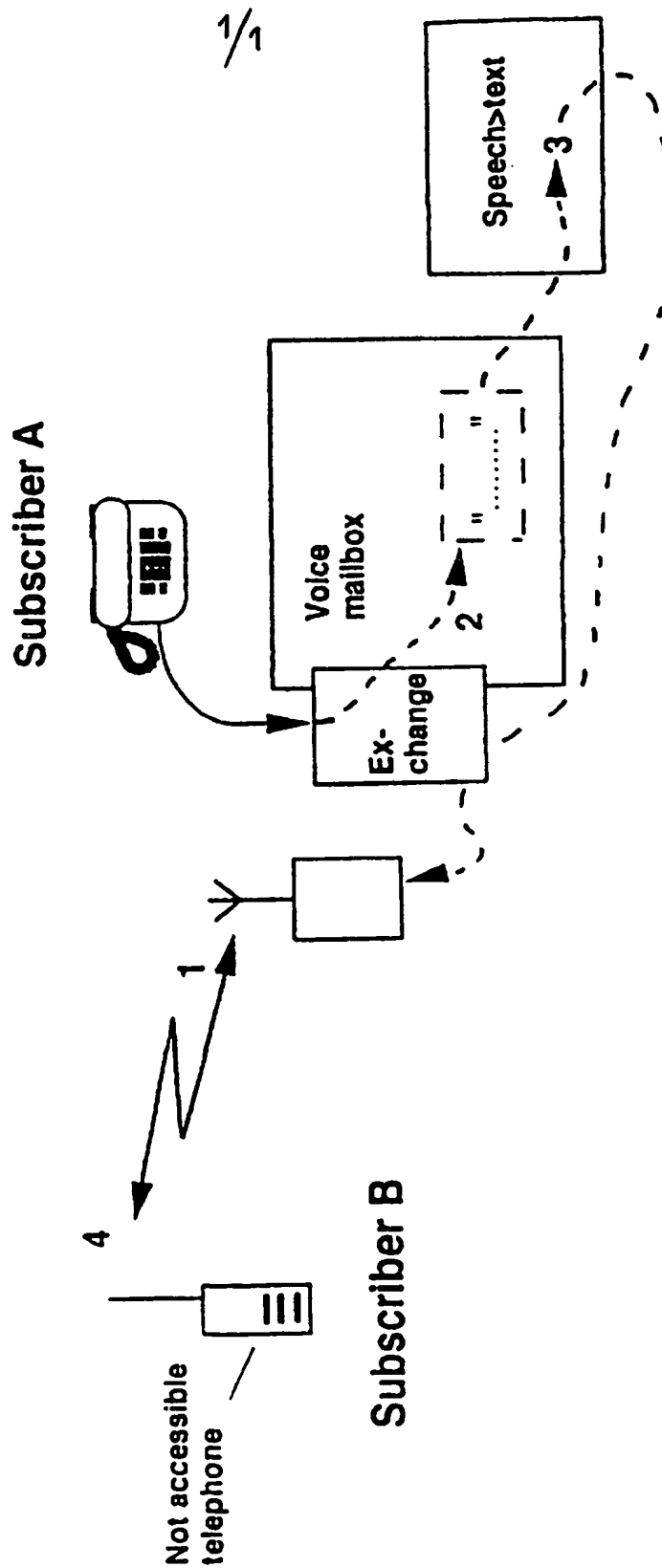
(d) the speech/text-converter (3) transmits said text message to said subscriber (B)'s terminal (4) via a station (1);

(e) said text message is shown to the subscriber (B)  
5 on the display of said terminal (4).

6. Method according to patent claim 5,  
c h a r a c t e r i z e d in that said terminal consist of  
just any mobile telephone, just any pager, or just any  
mobile terminal.

10 7. Method according to any of the patent claims 5 or  
6, c h a r a c t e r i z e d in that said speech/text-  
converter (3) only transmits a first predetermined number  
of characters of the speech message to said terminal (4).

8. Method according to patent claim 7,  
15 c h a r a c t e r i z e d in that in the GSM-text case the  
first 160 characters of the speech message are transmitted.



### Figure 1



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 97/01200

## A. CLASSIFICATION OF SUBJECT MATTER

IPC6: H04M 3/50, H04Q 7/22

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: H04M, H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9614701 A2 (APOGEE 2000, INC.), 17 May 1996 (17.05.96), abstract  --	1,2,4,5,7,8
X	EP 0586954 A2 (ROLM COMPANY), 16 March 1994 (16.03.94), column 4, line 36 - column 6, line 17, abstract  -----	1,2,4,5,7,8

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

## \* Special categories of cited documents

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "B" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

18 December 1997

Date of mailing of the international search report

08 -01- 1998

Name and mailing address of the ISA/  
Swedish Patent Office  
Box 5055, S-102 42 STOCKHOLM  
Facsimile No. +46 8 666 02 86

Authorized officer

Bengt Romedahl  
Telephone No. +46 8 782 25 00

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SE 97/01200

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claims Nos.: 3, 6  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
  
The claims mention "just any mobile telephone..." without giving any characteristical technical features.
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark . . . Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

02/12/97

International application No.  
PCT/SE 97/01200

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9614701 A2	17/05/96	AU 4362996 A EP 0796534 A US 5687220 A AU 6249596 A US 5684862 A WO 9637990 A	31/05/96 24/09/97 11/11/97 11/12/96 04/11/97 28/11/96
EP 0586954 A2	16/03/94	NONE	

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☒ FADED TEXT OR DRAWING
- ☒ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☒ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**